1) $$\begin{cases} V_A.(Y_1+sC+Y_2+Y_3) - V_i.Y_1 - V_{o1}.sC - V_{o1}.Y_2 - V_o.Y_3 = 0 \\ V_B.(Y_3+sC) - V_{o1}.Y_3 - V_{o2}.sC = 0 \\ V_C(Y_4+Y_4) - V_{o2}.Y_4 - V_o.Y_4 = 0 \end{cases}$$

$$V_A = V_B = V_C = 0$$

$$V_{o2} = -V_o.\frac{Y_4}{Y_4} \Rightarrow V_{o2} = -V_o$$

$$-V_{o1}.Y_3 = -V_o.sC \Rightarrow V_{o1} = V_o.\frac{sC}{Y_3}$$

$$-V_o\left(\frac{s^2C^2}{Y_3} + \frac{sC.Y_2}{Y_3} + Y_3\right) = V_i.Y_1$$

$$-V_o\left(\frac{s^2C^2 + sCY_2 + Y_3^2}{Y_3}\right) = V_i.Y_1$$

$$\frac{V_o}{V_i} = -\frac{Y_1 Y_3}{s^2C^2 + sCY_2 + Y_3^2}$$

$$H(s) = \frac{V_o}{V_i} = -\frac{\frac{Y_1 Y_3}{C^2}}{s^2 + s\frac{Y_2}{C} + \frac{Y_3^2}{C^2}}$$

$$H(s) = \frac{V_o}{V_i} = -\frac{R_3}{R_1} \cdot \frac{\frac{1}{C^2R_3^2}}{s^2 + s\frac{1}{CR_2} + \frac{1}{C^2R_3^2}} \;//$$

$$\boxed{H(s) = \frac{V_o}{V_i} = K.\frac{\omega_o^2}{s^2 + s\frac{\omega_o}{Q} + \omega_o^2}}$$

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